Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Previously Presented) A method of inserting empty memory cells into a data flow of network connections of a computer network, the method comprising:

receiving during a predetermined period of time insertion requests for empty memory cells to be inserted into the data flow from a plurality of requesting sources, each of the requesting sources having a corresponding priority such that the insertion request from the highest priority source will be carried out;

determining an appropriate insertion scheme for carrying out the insertion request, wherein the appropriate insertion scheme includes a first insertion scheme configured to send the insertion request using a first indicator that the empty memory cell should be shaped using predetermined shaping parameters and a second insertion scheme configured to send the insertion request using a second indicator that the empty memory cell should be unshaped; and

sending the insertion request to an insertion device configured to insert the empty memory cell into a main buffer for the data flow, the insertion request including the first indicator or the second indicator based on the appropriate insertion scheme determined.

2. (Previously Presented) The method of claim 1, further comprising receiving a base connection identification (CID) associated with the insertion request, wherein the first insertion scheme is configured to send the insertion request using the base connection identification (CID), wherein the base connection identification is associated with predetermined shaping parameters.

3. (Previously Presented) The method of claim 2, wherein the method further comprises shaping the empty memory cell according to the predetermined shaping parameters.

4. (Previously Presented) The method of claim 1, wherein the second insertion scheme is configured to send the insertion request using dedicated unshaped connection identifications.

5. (Previously Presented) The method of claim 4, wherein there are 16 unshaped connection identifications.

6. (Previously Presented) The method of claim 4, the method further comprising:

configuring the dedicated unshaped connection identifications for the computer network to obtain configured connection identifications;

configuring the base connection identification for the configured connection identifications;

configuring a cell type indication to be used for the insertion request; and

configuring a queue identification to be used for the insertion request.

7. (Previously Presented) The method of claim 1, wherein the insertion request is received from one of:

an operations and maintenance (OAM) device;

a performance monitoring device;

an available bit rate (ABR) device;

a central processing unit; or

an operations and maintenance scan device.

8. (Previously Presented) The method of claim 7, wherein the performance monitoring device and the operations and maintenance scan device each requires the insertion request to be carried out with the first insertion scheme.

9. (Previously Presented) The method of claim 1, wherein the an available bit rate (ABR) device requires the insertion request to be carried out with the second insertion scheme.

10. (Previously Presented) The method of claim 1, wherein the step of determining the appropriate insertion scheme comprises performing a lookup in a scan table.

11. (Previously Presented) The method of claim 1, wherein the step of sending the insertion request causes the empty memory cell to be transmitted through the data flow.

12. (Previously Presented) The method of claim 6, wherein the empty memory cell inserted by the insertion device carries the cell type indication.

13. (Previously Presented) An integrated circuit configured to insert empty memory cells into a data flow of network connections of a computer network, the integrated circuit comprising:

controller circuitry configured to control operations of:

receiving during a predetermined period of time insertion requests for empty memory cells to be inserted into the data flow from a plurality of requesting sources, each of the requesting sources having a corresponding priority such that the insertion request from the highest priority source will be carried out;

determining an appropriate insertion scheme for carrying out the insertion request, wherein the appropriate insertion scheme includes a first insertion scheme configured to send the insertion request using a first indicator that the empty memory cell should be shaped using predetermined shaping parameters and a second insertion scheme configured to send the insertion request using a second indicator that the empty memory cell should be unshaped; and

based on the appropriate insertion scheme, sending the insertion request to an insertion device configured to insert the empty memory cell into a main buffer for the data flow, the insertion request including the first indicator or the second indicator based on the appropriate insertion scheme determined.

14. (Previously Presented) The integrated circuit of claim 13, further comprising receiving a base connection identification (CID) associated with the insertion

request, wherein the first insertion scheme is configured to send the insertion request using the base connection identification (CID), wherein the base connection identification is associated with predetermined shaping parameters.

15. (Previously Presented) The integrated circuit of claim 14, wherein the controller circuitry is further configured to control shaping the empty memory cell according to the predetermined shaping parameters.

16. (Previously Presented) The integrated circuit of claim 13, wherein the second insertion scheme is configured to send the insertion request using dedicated unshaped connection identifications.

17. (Previously Presented) The integrated circuit of claim 16, wherein there are 16 unshaped connection identifications.

18. (Previously Presented) The integrated circuit of claim 16, wherein the controller circuitry is further configured to control operations of:

configuring the dedicated unshaped connection identifications for the computer network to obtain configured connection identifications;

configuring the base connection identification for the configured connection identifications;

configuring a cell type indication to be used for the insertion request; and

configuring a queue identification to be used for the insertion request.

19. (Previously Presented) The integrated circuit of claim 13, wherein the insertion request is received from one of:

an operations and maintenance (OAM) device;

a performance monitoring device;

an available bit rate (ABR) device;

a central processing unit; or

an operations and maintenance scan device.

20. (Previously Presented) The integrated circuit of claim 19, wherein the performance monitoring device and the operations and maintenance scan device each requires the insertion request to be carried out with the first insertion scheme.

21. (Previously Presented) The integrated circuit of claim 13, wherein the an available bit rate (ABR) device requires an insertion request to be carried out with the second insertion scheme.

22. (Previously Presented) The integrated circuit of claim 13, wherein with the step of determining an appropriate insertion scheme, the controller circuitry is further configured to control performing a lookup in a scan table.

23. (Previously Presented) The integrated circuit of claim 13, wherein the step of sending the insertion request causes the empty memory cell to be transmitted through the data flow.

24. (Previously Presented) The integrated circuit of claim 18, wherein the empty memory cell inserted by the insertion device carries the cell type indication.

25. (Previously Presented) A computer-readable medium carrying one or more sequences of one or more instructions for inserting empty memory cells into a data flow of network connections of a computer network, the one or more sequences of one or more instructions including instructions which, when executed by one or more processors, cause the one or more processors to perform steps of:

receiving during a predetermined period of time insertion requests for empty memory cells to be inserted into the data flow from a plurality of requesting sources, each of the requesting sources having a corresponding priority such that the insertion request from the highest priority source will be carried out;

determining an appropriate insertion scheme for carrying out the insertion request, wherein the appropriate insertion scheme includes a first insertion scheme configured to send the insertion request using a first indicator that the empty memory cell should be shaped using

predetermined shaping parameters and a second insertion scheme configured to send the insertion request using a second indicator that the empty memory cell should be unshaped; and

based on the appropriate insertion scheme, sending the insertion request to an insertion device configured to insert the empty memory cell into a main buffer for the data flow , the insertion request including the first indicator or the second indicator based on the appropriate insertion scheme determined.

26. (Previously Presented) The computer-readable medium of claim 25, further comprising receiving a base connection identification (CID) associated with the insertion request, wherein the first insertion scheme is configured to send the insertion request using the base connection identification (CID), wherein the base connection identification is associated with predetermined shaping parameters.

27. (Previously Presented) The computer-readable medium of claim 26, wherein the instructions further cause the processor to perform a step of shaping the empty memory cell according to the predetermined shaping parameters.

28. (Previously Presented) The computer readable-medium of claim 25, wherein the second insertion scheme is a predetermined insertion scheme configured to send the insertion request using dedicated unshaped connection identifications.

29. (Previously Presented) The computer-readable medium of claim 28, wherein there are 16 unshaped connection identifications.

30. (Previously Presented) The computer-readable medium of claim 28, wherein the instructions further cause the processor to perform steps of:

configuring the dedicated unshaped connection identifications for the computer network to obtain configured connection identifications;

configuring the base connection identification for the configured connection identifications;

configuring a cell type indication to be used for the insertion request; and

configuring a queue identification to be used for the insertion request.

31. (Previously Presented) The computer-readable medium of claim 25, wherein the insertion request is received from one of:

an operations and maintenance (OAM) device; a performance monitoring device;

an available bit rate (ABR) device; a central processing unit; or

an operations and maintenance scan device.

32. (Previously Presented) The computer-readable medium of claim 31, wherein the performance monitoring device and the operations and maintenance scan device each requires the insertion request to be carried out with the first insertion scheme.

33. (Previously Presented) The computer-readable medium of claim 25, wherein the an available bit rate (ABR) device requires the insertion request to be carried out with the second insertion scheme.

34. (Previously Presented) The computer-readable medium of claim 25, wherein the step of determining the appropriate insertion scheme further causes the processor to perform a lookup in a scan table.

35. (Previously Presented) The computer-readable medium of claim 25, wherein the step of sending the insertion request causes the processor to perform a step of transmitting the empty memory cell through the data flow.

36. (Previously Presented) The computer-readable medium of claim 30, wherein the empty memory cell inserted by the insertion device carries the cell type indication.

37-38. (Canceled)

39. (Previously Presented) A method of inserting empty memory cells into a data flow of network connections of a computer network, the method comprising:

receiving candidate insertion requests for empty memory cells to be inserted into the data flow from a plurality of requesting sources, each requesting source having a corresponding priority;

identifying an insertion request to be carried out from among the candidate insertion requests based upon the priority of its requesting source;

retrieving information for processing the insertion request from a data source using an identifier included with the insertion request;

determining an appropriate insertion scheme for carrying out the insertion request based upon its requesting source and the information from the data source, wherein the appropriate insertion scheme includes a first insertion scheme in which an empty memory cell should be shaped using predetermined shaping parameters and a second insertion scheme in which the empty memory cell should be unshaped; and

sending an instruction for performing the insertion request to an insertion device configured to insert the empty memory cell into a main buffer for the data flow based on the appropriate insertion scheme determined.